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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

<p>EUCALYPTUS</p> <p>UPOV Code: EUCAL</p> <p><i>Eucalyptus</i> L'Hér. Sub-genus <i>Symphyomyrtus</i> Sections <i>Transversaria</i>, <i>Maidenaria</i>, <i>Exsertaria</i></p>

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Eucalyptus</i> L'Hér. (Sub-genus <i>Symphyomyrtus</i>) (Sections <i>Transversaria</i> , <i>Maidenaria</i> , <i>Exsertaria</i>)	Eucalyptus	Eucalyptus	Eukalyptus	Eucalipto

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of the species of the sections *Transversaria*, *Maidenaria* and *Exsertaria* of the sub-genus *Symphyomyrtus* of the genus *Eucalyptus* L'Hér.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of young plants, 4 to 6 months old.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

7 plants.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 *Number of Growing Cycles*

The minimum duration of tests should normally be a single growing cycle.

3.2 *Testing Place*

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness".

3.3 *Conditions for Conducting the Examination*

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 7 plants.

3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 *Additional Tests*

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 *Distinctness*

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 5 plants or parts taken from each of 5 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of Characteristics (see document TGP/9 "Examining Distinctness", Section 4 "Observation of characteristics"):

- MG: single measurement of a group of plants or parts of plants
- MS: measurement of a number of individual plants or parts of plants
- VG: visual assessment by a single observation of a group of plants or parts of plants
- VS: visual assessment by observation of individual plants or parts of plants

Type of observation: visual (V) or measurement (M)

"Visual" observation (V) is an observation made on the basis of the expert's judgment. For the purposes of this document, "visual" observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 *Uniformity*

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 For the assessment of uniformity, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 7 plants, 1 off-type is allowed.

4.3 *Stability*

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

- (a) Leaf: waxiness of upper side (characteristic 2)
- (b) Leaf: petiole (characteristic 4)
- (c) Primary branch: type of insertion in main stem (characteristic 13)
- (d) Flower: type (characteristic 45)
- (e) Only varieties with flower type: umbel: Flower: number of buds (characteristic 46)
- (f) Fruit: shape (characteristic 51)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 "Examining Distinctness".

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS

and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 *States of Expression and Corresponding Notes*

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	Note
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	Note
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 "Development of Test Guidelines".

6.3 *Types of Expression*

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 *Example Varieties*

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 *Legend*

(*) Asterisk characteristic – see Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3

QN: Quantitative characteristic – see Chapter 6.3

PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG, MS, VG, VS – see Chapter 4.1.5

(a)-(d) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8.2

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. VG	Branch: attitude	Rameau : port	Zweig: Haltung	Rama: porte		
(+)						
QN	(a) erect	dressé	aufrecht	erecto		1
	semi-erect	demi-dressé	halbaufrecht	semierecto		2
	horizontal	horizontal	waagrecht	horizontal		3
2. VG	Leaf: waxiness of upper side	Feuille : pruine de la face supérieure	Blatt: Wachsschicht auf der Oberseite	Hoja: pruina del haz		
(*)						
QN	(a) absent or weak	absente ou faible	fehlend oder gering	ausente o débil	IPB3, IPB4, SUZSP0619	1
	medium	moyenne	mittel	media	VM08	2
	strong	forte	stark	fuerte	VT06	3
3. VG	Leaf: anthocyanin coloration	Feuille : pigmentation anthocyanique	Blatt: Anthocyanfärbung	Hoja: pigmentación antocianica		
QN	(a) absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	SEAGR46, SEAGR47, SUZBA9318	1
	weak	faible	gering	débil	AEC 1528	3
	medium	moyenne	mittel	media	IPB2, VT01	5
	strong	forte	stark	fuerte		7
	very strong	très forte	sehr stark	muy fuerte		9
4. VG	Leaf: petiole	Feuille : pétiole	Blatt: Blattstiel	Hoja: peciolo		
(*)						
(+)						
QL	(a) absent	absent	fehlend	ausente		1
	present	présent	vorhanden	presente		9
5. VG	<u>Only varieties without petiole</u>: Leaf: attachment	<u>Uniquement les variétés sans pétiole</u> : Feuille : attache	<u>Nur Sorten ohne Blattstiel</u>: Blatt: Ansatzstelle	<u>Sólo en variedades sin peciolo</u>: Hoja: base		
(*)						
(+)						
PQ	(a) connate	connée	verwachsen	connada		1
	amplexicaul	amplexicaule	stengelumfassend	amplexical		2
	decurent	déursive	herablaufend	decurrente		3
6. VG/MS	Leaf blade: length	Limbe : longueur	Blattspreite: Länge	Limbo: longitud		
(*)						
(+)						
QN	(a) short	court	kurz	corto		3
	medium	moyen	mittel	medio	ARA 6075, SUZSP0530	5
	long	long	lang	largo	ARA 6011, ARA 6061	7
7. VG/MS	Leaf blade: width	Limbe : largeur	Blattspreite: Breite	Limbo: anchura		
(*)						
(+)						
QN	(a) narrow	étroit	schmal	estrecho	SUZMA2015	3
	medium	moyen	mittel	medio	ARA1967, IPB2, VT01	5
	broad	large	breit	ancho	SUZSPO619, SUZSP1002, VT07	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
8. VG/ MS (*) (+)	Leaf blade: ratio length/width	Limbe : rapport longueur/largeur	Blattspreite: Verhältnis Länge/Breite	Limbo: relación longitud/anchura		
QN (a)	low	bas	klein	baja	SUZMA2015, VT09	3
	medium	moyen	mittel	media	ARA1967, IPB2, VT01	5
	high	élevé	groß	alta	SUZSP0530, VM08	7
9. VG	Leaf blade: position of broadest part	Limbe : position de la partie la plus large	Blattspreite: Position der breitesten Stelle	Limbo: posición de la parte más ancha		
QN (a)	towards base	vers la base	zur Basis hin	hacia la base		1
	at middle	au milieu	in der Mitte	central		2
	towards top	vers le sommet	zur Spitze hin	hacia la parte superior		3
10. VG (*) (+)	Leaf blade: shape of base	Limbe : forme de la base	Blattspreite: Form der Basis	Limbo: forma de la base		
PQ (a)	sagittate	sagittée	pfeilspitzenförmig	sagitada		1
	hastate	hastée	spießförmig	hastada		2
	auriculate	auriculée	geöhrt	auriculada		3
	cordate	cordiforme	herzförmig	cordada		4
	obtuse	obtuse	stumpf	obtusa		5
	cuneate	cunéiforme	keilförmig	cuneada		6
	attenuate	effilée	verjüngt	atenuada		7
	oblique	oblique	schräg abstehend	oblicua		8
11. VG (*) (+)	Leaf blade: shape of apex	Limbe : forme du sommet	Blattspreite: Form des Scheitels	Limbo: forma del ápice		
PQ (a)	rounded	arrondi	abgerundet	redondeado		1
	obtuse	obtus	stumpf	obtuso		2
	acute	aigu	spitz	agudo		3
	subulate	subulé	pfriemförmig	subulado		4
12. VG (*) (+)	Leaf blade: tip	Limbe : extrémité	Blattspreite: Spitze	Limbo: extremo		
PQ (a)	none	aucune	keine	ninguno		1
	apiculate	apiculée	fein zugespitzt	apiculado		2
	acuminate	acuminée	zugespitzt	acuminado		3
	cirrhus	cirrheuse	rankenförmig	cirriforme		4
	mucronate	mucronée	mit kurzer aufgesetzter Spitze	mucronado		5
	aristate	aristée	begrannt	aristado		6
	emarginate	émarginée	eingekerbt	emarginado		7
	obcordate	obcordiforme	verkehrt herzförmig	obcordado		8

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13. VG (*) (+)	Primary branch: type of insertion in main stem	Rameau primaire : type d'insertion sur la tige principale	Primärast: Typ des Ansatzes im Hauptstamm	Rama primaria: tipo de inserción en el tallo principal		
QL (b)	inverted "V" circular	en "V" inversé circulaire	verkehrtes „V“ rund	en "V" invertida circular		1 2
14. VG (+)	Leaf: attitude	Feuille : port	Blatt: Haltung	Hoja: porte		
QN (b)	erect horizontal downwards	dressé horizontal retombant	aufrecht waagrecht abwärts gerichtet	erecto horizontal descendente		1 2 3
15. VG (*)	Leaf: waxiness of upper side	Feuille : pruine de la face supérieure	Blatt: Wachsschicht der Oberseite	Hoja: pruina del haz		
QN (b)	absent or weak medium strong	absente ou faible moyenne forte	fehlend oder gering mittel stark	ausente o débil media fuerte	IPB5, SEAGR47, SUZSP0628, SUZBA9318 ARA6011, ARA6061, ARA11097 ARA1967, VT01	1 2 3
16. VG (*) (+)	Leaf: petiole	Feuille : pétiole	Blatt: Blattstiel	Hoja: peciolo		
QL (b)	absent present	absent présent	fehlend vorhanden	ausente presente		1 9
17. VG/MS (*) (+)	Leaf blade: length	Limbe : longueur	Blattspreite: Länge	Limbo: longitud		
QN (b)	short medium long	court moyen long	kurz mittel lang	corto medio largo	ARA 6075, SUZSP0530 ARA 6011, ARA 6061	3 5 7
18. VG/MS (*) (+)	Leaf blade: width	Limbe : largeur	Blattspreite: Breite	Limbo: anchura		
QN (b)	narrow medium broad	étroit moyen large	schmal mittel breit	estrecho medio ancho	SUZMA2015 ARA1967, IPB2, VT01 SUZSPO619, SUZSP1002, VT07	3 5 7
19. VG/MS (*) (+)	Leaf blade: ratio length/width	Limbe : rapport longueur/largeur	Blattspreite: Verhältnis Länge/Breite	Limbo: relación longitud/anchura		
QN (b)	low medium high	bas moyen élevé	klein mittel groß	baja media alta		3 5 7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20.	VG	Leaf blade: position of broadest part	Limbe : position de la partie la plus large	Blattspreite: Position der breitesten Stelle	Limbo: posición de la parte más ancha	
QN	(b)	towards base	vers la base	zur Basis hin	hacia la base	1
		at middle	au milieu	in der Mitte	central	2
		towards top	vers le sommet	zur Spitze hin	hacia la parte superior	3
21.	VG	Leaf blade: shape of base	Limbe : forme de la base	Blattspreite: Form der Basis	Limbo: forma de la base	
PQ	(b)	sagittate	sagittée	pfeilspitzenförmig	sagitada	1
		hastate	hastée	spießförmig	hastada	2
		auriculate	auriculée	geöhrt	auriculada	3
		cordate	cordiforme	herzförmig	cordada	4
		obtuse	obtuse	stumpf	obtusa	5
		cuneate	cunéiforme	keilförmig	cuneada	6
		attenuate	effilée	verjüngt	atenuada	7
		oblique	oblique	schräg abstehend	oblicua	8
22.	VG	Leaf blade: shape of apex	Limbe : forme du sommet	Blattspreite: Form des Scheitels	Limbo: forma del ápice	
PQ	(b)	rounded	arrondi	abgerundet	redondeado	1
		obtuse	obtus	stumpf	obtuso	2
		acute	aigu	spitz	agudo	3
		subulate	subulé	pfriemförmig	subulado	4
23.	VG	Leaf blade: tip	Limbe : extrémité	Blattspreite: Spitze	Limbo: extremo	
PQ	(b)	none	aucune	keine	ninguno	1
		apiculate	apiculée	fein zugespitzt	apiculado	2
		acuminate	acuminée	zugespitzt	acuminado	3
		cirrhous	cirrhose	rankenförmig	cirriforme	4
		mucronate	mucronée	mit kurzer aufgesetzter Spitze	mucronado	5
		aristate	aristée	begrannt	aristado	6
		emarginate	émarginée	eingekerbt	emarginado	7
		obcordate	obcordiforme	verkehrt herzförmig	obcordado	8
24.	VG	Trunk: waxiness (excluding rhytidome)	Tronc : pruine (rhytidome exclu)	Stamm: Wachsschicht (ohne Rhytidom)	Tronco: pruina (excluido el ritidoma)	
QN	(c)	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	1
		medium	moyenne	mittel	media	2
		strong	forte	stark	fuerte	3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.	VG	Leaf: attitude	Feuille : port	Blatt: Haltung	Hoja: porte	
	(+)					
QN	(c)	erect	dressé	aufrecht	erecto	1
		horizontal	horizontal	waagrecht	horizontal	2
		downwards	retombant	abwärts gerichtet	descendente	3
26.	VG	Leaf: intensity of color of upper side in relation to lower side	Feuille : intensité de la couleur de la face supérieure par rapport à la face inférieure	Blatt: Intensität der Farbe der Oberseite im Vergleich zur Unterseite	Hoja: intensidad del color del haz en relación con el envés	
QN	(c)	same or slightly darker	même couleur ou légèrement plus foncée	gleich oder leicht dunkler	del mismo color o ligeramente más oscuro	1
		moderately darker	modérément plus foncée	mäßig dunkler	moderadamente más oscuro	2
		much darker	beaucoup plus foncée	viel dunkler	más oscuro	3
27.	VG	Leaf: waxiness of upper side	Feuille : pruine de la face supérieure	Blatt: Wachsschicht der Oberseite	Hoja: pruina del haz	
QN	(c)	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	IPB1, IPB2, IPB3
		medium	moyenne	mittel	media	VT01, VT02, VT05
		strong	forte	stark	fuerte	
28.	VG	Leaf: petiole	Feuille : pétiole	Blatt: Blattstiel	Hoja: peciolo	
	(*) (+)					
QL	(c)	absent	absent	fehlend	ausente	1
		present	présent	vorhanden	presente	9
29.	VG/MS	Leaf blade: length	Limbe : longueur	Blattspreite: Länge	Limbo: longitud	
	(*) (+)					
QN	(c)	short	court	kurz	corto	3
		medium	moyen	mittel	medio	ARA 6075, SUZSP0530
		long	long	lang	largo	ARA 6011, ARA 6061
30.	VG/MS	Leaf blade: width	Limbe : largeur	Blattspreite: Breite	Limbo: anchura	
	(*) (+)					
QN	(c)	narrow	étroit	schmal	estrecho	SUZMA2015
		medium	moyen	mittel	medio	ARA1967, IPB2, VT01
		broad	large	breit	ancho	SUZSPO619, SUZSP1002, VT07
31.	VG/MS	Leaf blade: ratio length/width	Limbe : rapport longueur/largeur	Blattspreite: Verhältnis Länge/Breite	Limbo: relación longitud/anchura	
	(+)					
QN	(c)	low	bas	klein	baja	3
		medium	moyen	mittel	media	5
		high	élevé	groß	alta	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
32.	VG	Leaf blade: position of broadest part	Limbe : position de la partie la plus large	Blattspreite: Position der breitesten Stelle	Limbo: posición de la parte más ancha	
QN	(c)	towards base	vers la base	zur Basis hin	hacia la base	1
		at middle	au milieu	in der Mitte	central	2
		towards top	vers le sommet	zur Spitze hin	hacia la parte superior	3
33.	VG	Leaf blade: shape of base	Limbe : forme de la base	Blattspreite: Form der Basis	Limbo: forma de la base	
(+)						
PQ	(c)	sagittate	sagittée	pfeilspitzenförmig	sagitada	1
		hastate	hastée	spießförmig	hastada	2
		auriculate	auriculée	geöhrt	auriculada	3
		cordate	cordiforme	herzförmig	cordada	4
		obtuse	obtuse	stumpf	obtusa	5
		cuneate	cunéiforme	keilförmig	cuneada	6
		attenuate	effilée	verjüngt	atenuada	7
		oblique	oblique	schräg abstehend	oblicua	8
34.	VG	Leaf blade: shape of apex	Limbe : forme du sommet	Blattspreite: Form des Scheitels	Limbo: forma del ápice	
(+)						
PQ	(c)	rounded	arrondi	abgerundet	redondeado	1
		obtuse	obtus	stumpf	obtuso	2
		acute	aigu	spitz	agudo	3
		subulate	subulé	pfriemförmig	subulado	4
35.	VG	Leaf blade: tip	Limbe : extrémité	Blattspreite: Spitze	Limbo: extremo	
(+)						
PQ	(c)	none	aucune	keine	ninguno	1
		apiculate	apiculée	fein zugespitzt	apiculado	2
		acuminate	acuminée	zugespitzt	acuminado	3
		cirrhous	cirrhose	rankenförmig	cirriforme	4
		mucronate	mucronée	mit kurzer aufgesetzter Spitze	mucronado	5
		aristate	aristée	begrannt	aristado	6
		emarginate	émarginée	eingekerbt	emarginado	7
		obcordate	obcordiforme	verkehrt herzförmig	obcordado	8
36.	VG	Trunk: rhytidome	Tronc : rhytidome	Stamm: Rhytidom	Tronco: ritidoma	
(*)						
(+)						
QL	(d)	absent	absent	fehlend	ausente	1
		present	présent	vorhanden	presente	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
37. (+)	VG Trunk: texture of basal rhytidome	Tronc : texture du rhytidome basal	Stamm: Beschaffenheit des unteren Rhytidoms	Tronco: textura del ritidoma basal		
QN (d)	compact	compact	kompakt	compacto		1
	moderately fibrous	modérément fibreux	mäßig fibrös	moderadamente fibroso		2
	very fibrous	très fibreux	sehr fibrös	muy fibroso		3
38. (+)	VG Trunk: extension of rhytidome	Tronc : extension du rhytidome	Stamm: Ausdehnung des Rhytidoms	Tronco: extensión del ritidoma		
QN (d)	up to lower third	jusqu'au tiers inférieur	bis zum unteren Drittel	hasta el tercio inferior		1
	up to mid-third	jusqu'au tiers moyen	bis zum mittleren Drittel	hasta el tercio medio		2
	up to upper third	jusqu'au tiers supérieur	bis zum oberen Drittel	hasta el tercio superior		3
39. (+)	MG Trunk: density of wood	Tronc : densité du bois	Stamm: Dichte des Holzes	Tronco: densidad de la madera		
QN (d)	low	basse	gering	baja		3
	medium	moyenne	mittel	media		5
	high	élevée	hoch	alta		7
40. (+)	VG Trunk: color of rhytidome	Tronc : couleur du rhytidome	Stamm: Farbe des Rhytidoms	Tronco: color del ritidoma		
PQ (d)	green	vert	grün	verde		1
	grey	gris	grau	gris	ARA11097	2
	brown	brun	braun	marrón		3
41. (*)	VG Trunk: color (excluding rhytidome)	Tronc : couleur (rhytidome exclu)	Stamm: Farbe (ohne Rhytidom)	Tronco: color (excluido el ritidoma)		
PQ (d)	brownish white	blanc brunâtre	bräunlichweiß	blanco parduzco		1
	green	vert	grün	verde	VM 11	2
	bluish green	vert bleuâtre	bläulichgrün	verde azulado	ARA 6075, IPB4	3
	grey	gris	grau	gris	SUZMA 2001, VM08	4
	brown	brun	braun	marrón	IPB7, VT01, VT02,	5
42. (+)	VG Primary branch: type of insertion in main stem	Rameau primaire : type d'insertion sur la tige principale	Primärast: Typ des Ansatzes im Hauptstamm	Rama primaria: tipo de inserción en el tallo principal		
QL (d)	inverted "V"	en "V" inversé	verkehrtes „V“	en "V" invertida		1
	circular	circulaire	rund	circular		2
43. (*) (+)	VG Leaf: petiole	Feuille : pétiole	Blatt: Blattstiel	Hoja: peciolo		
QL (d)	absent	absent	fehlend	ausente		1
	present	présent	vorhanden	presente		9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
44.	MG	Time of first flowering	Époque de la première floraison	Zeitpunkt der ersten Blüte	Época de la primera floración	
QN	(d)	early	précoce	früh	temprana	1
		medium	moyenne	mittel	media	2
		late	tardive	spät	tardía	3
45.	VG	Flower: type	Fleur : type	Blüte: Typ	Flor: tipo	
(+)						
QL	(d)	solitary	isolée	einzeln	aislada	1
		umbel	ombelle	Dolde	umbela	2
46.	MG	<u>Only varieties with flower type: umbel:</u> Flower: number of buds	<u>Uniquement les variétés à type de fleurs : ombelle :</u> Fleur : nombre de bourgeons	<u>Nur Sorten mit Blütentyp: Dolde:</u> Blüte: Anzahl der Knospen	<u>Sólo las variedades con tipo de flor: umbela:</u> Flor: número de yemas	
QL	(d)	three	trois	drei	tres	1
		seven	sept	seven	siete	2
		nine	neuf	neun	nueve	3
		eleven	onze	elf	once	4
		more than eleven	plus de onze	mehr als elf	mas de once	5
47.	VG	Flower bud: shape of operculum	Bouton floral : forme de l'opercule	Blütenknospe: Form des Operculums	Botón floral: forma del opérculo	
(+)						
PQ	(d)	rostrate	rostré	hakenförmig	rostrado	1
		hemispherical	hémisphérique	halbkugelförmig	hemisférico	2
		hemispherical apiculate	hémisphérique apiculé	halbkugelförmig fein zugespitzt	apiculado hemisférico	3
		flattened with a prominent pointed tip	aplati avec une extrémité pointue proéminente	abgeflacht mit vorstehender spitzer Spitze	aplanado con extremo puntiagudo prominente	4
		horn-shaped	en corne	hornförmig	en forma de cuerno	5
		elongated	allongé	langgezogen	alargado	6
		conical	conique	konisch	cónico	7
48.	VG/ MS	<u>Only varieties with flower type: umbel:</u> Peduncle: length	<u>Uniquement les variétés à type de fleurs : ombelle :</u> Pédoncule : longueur	<u>Nur Sorten mit Blütentyp: Dolde:</u> Blütenstandstiel: Länge	<u>Sólo las variedades con floración: umbela:</u> Pedúnculo: longitud	
QN	(d)	short	court	kurz	corto	3
		medium	moyen	mittel	medio	5
		long	long	lang	largo	7
					AEC 1528, ARA6061	
					IPB5, SEAGR47, SUZBA9318	

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
49. VG (+)	Peduncle: shape in cross section	Pédoncule : forme en section transversale	Blütenstandstiel: Form im Querschnitt	Pedúnculo: forma en sección transversal		
QN (d)	rounded	arrondi	abgerundet	redondeada		1
	rounded to flattened	arrondi à aplati	abgerundet bis abgeflacht	redondeada a aplanada		2
	flattened	aplati	abgeflacht	aplanada		3
50. VG/MS	Fruit: width	Fruit : largeur	Frucht: Breite	Fruto: anchura		
QN (d)	narrow	étroit	schmal	estrecho		3
	medium	moyen	mittel	medio		5
	broad	large	breit	ancho		7
51. VG (+)	Fruit: shape	Fruit : forme	Frucht: Form	Fruto: forma		
PQ (d)	conical	conique	konisch	cónico		1
	cylindrical	cylindrique	zylindrisch	cilíndrico		2
	ovoid	ovoïde	eiförmig	ovoide		3
	urceolate	urcéolé	urnenförmig	urceolado		4
	globose	globuleux	kugelförmig	globoso		5
	pyriform	pyriforme	birnenförmig	piriforme		6
	campanulate	campanulé	glockenförmig	acampanado		7
	hemispherical	hémisphérique	halbkugelförmig	hemisférico		8
52. VG (+)	Fruit: texture of surface	Fruit : texture de la surface	Frucht: Beschaffenheit der Oberfläche	Fruto: textura de la superficie		
QL (d)	smooth	lisse	glatt	lisa		1
	rough	rugueux	rauh	rugosa		2
53. VG (+)	Fruit: disc position	Fruit : position du disque	Frucht: Position der Scheibe	Fruto: posición del disco		
QN (d)	descending	retombant	herablaufend	descendente		1
	same level	même niveau	auf gleicher Höhe	al mismo nivel		2
	ascending	redressé	nach oben abstehend	orientado hacia arriba		3
54. VG (+)	Fruit: position of valve	Fruit : position de la valve	Frucht: Position des Ventils	Fruto: posición de la valva		
QN (d)	sunken	en creux	ingesunken	hundida		1
	rim level	au niveau du bord	auf Randhöhe	al nivel del borde		2
	above rim	au-dessus du bord	über den Rand hervorstehend	por encima del borde		3
55. VG (+)	Fruit: pedicel	Fruit : pédicelle	Frucht: Stiel	Fruto: pedicelo		
QL (d)	absent	absent	fehlend	ausente		1
	present	présent	vorhanden	presente		9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
56.	VG/ MS	Fruit pedicel: length relative to calyx	Pédicelle du fruit : longueur par rapport au calice	Fruchtstiel: Länge im Vergleich zum Kelch	Pedicelo del fruto: longitud en relación con el cáliz	
QN	(d)	shorter	plus court	kürzer	más corto	1
		equal	égal	gleich lang	igual	2
		longer	plus long	länger	más largo	3

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

- (a) Observations should be made on 10 to 12 month old trees.
- (b) Observations should be made on 20 to 22 month old trees.
- (c) Observations should be made on 42 to 44 month old trees.
- (d) Observations should be made on 64 to 66 month old trees.

Observations on the leaf should be made on leaves located on terminal shoots in active growth.

8.2 Explanations for individual characteristics

Ad. 1: Branch: attitude



1
erect



2
semi-erect



3
horizontal

Ad. 4, 16, 28, 43: Leaf: petiole

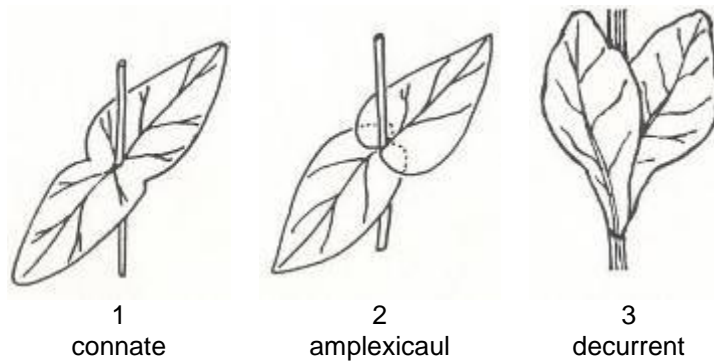


1
absent



9
present

Ad. 5: Only varieties without petiole: Leaf: attachment



1
connate

2
amplexicaul

3
decurrent

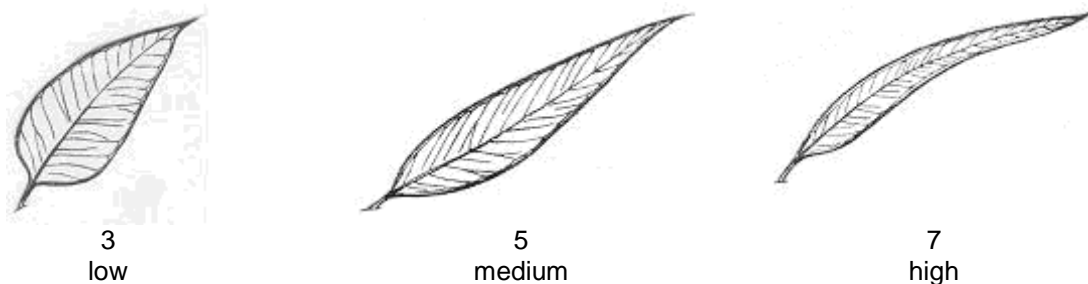
Ad. 6, 17, 29: Leaf blade: length

The length should be evaluated on the biggest leaf of a branch located in the beginning of the upper third of the crown.

Ad. 7, 18, 30: Leaf blade: width

This evaluation should be performed on the same leaf selected for characteristic 28. The observation should be made in the widest part of the blade.

Ad. 8, 19, 31: Leaf blade: ratio: length/width

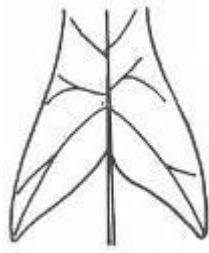


3
low

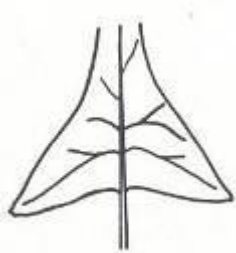
5
medium

7
high

Ad. 10, 21, 33: Leaf blade: shape of base



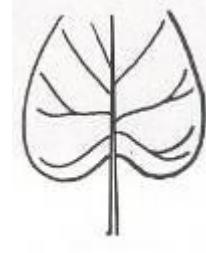
1
sagittate



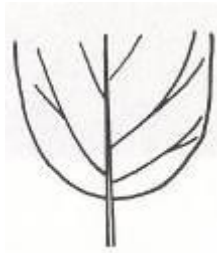
2
hastate



3
auriculate



4
cordate



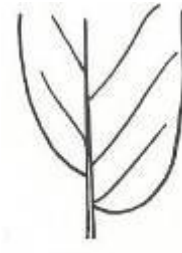
5
obtuse



6
cuneate



7
attenuate



8
oblique

Ad. 11, 22, 34: Leaf blade: shape of apex



1
rounded



2
obtuse



3
acute

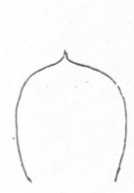


4
subulate

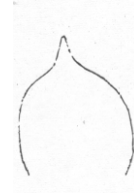
Ad. 12, 23, 35: Leaf blade: tip



1
none



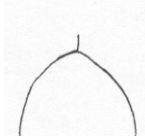
2
apiculate



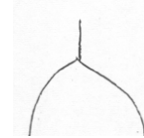
3
acuminate



4
cirrhous



5
mucronate



6
aristate



7
emarginate



8
obcordate

Ad. 13, 42: Primary branch: type of insertion in main stem



1
inverted "V"



2
circular

Ad. 14, 25: Leaf: attitude

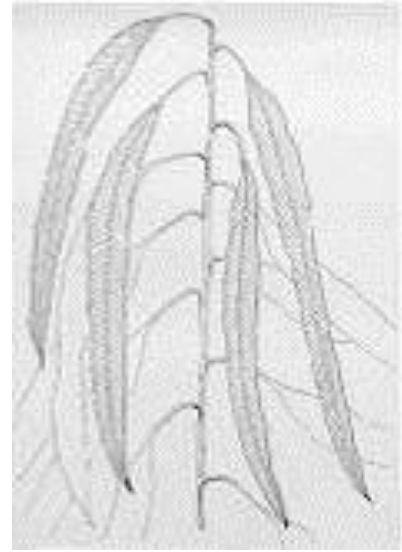
This characteristic should be observed with the branch positioned vertically.



1
erect



2
horizontal



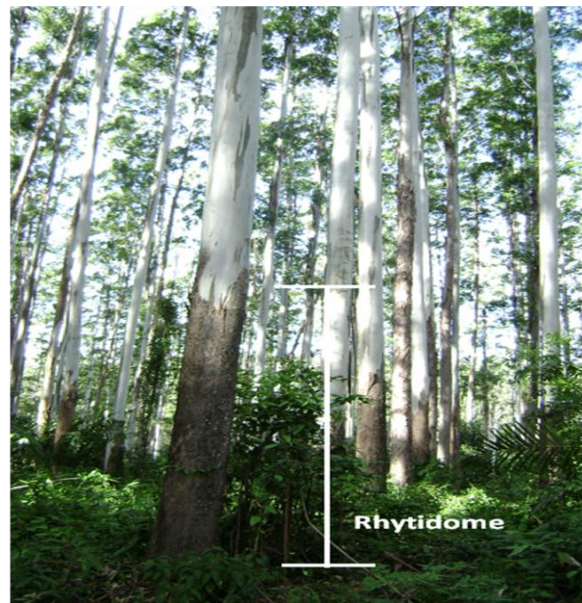
3
downwards

Ad. 36: Trunk: rhytidome

For some varieties as a tree grows in diameter, the bark tissues are stretched and eventually crack. A new phellogen is then originated in the phloem, and the tissues outside this new layer die and dry out, thus forming part of the outer rough bark of the tree. This bark is known as the rhytidome.

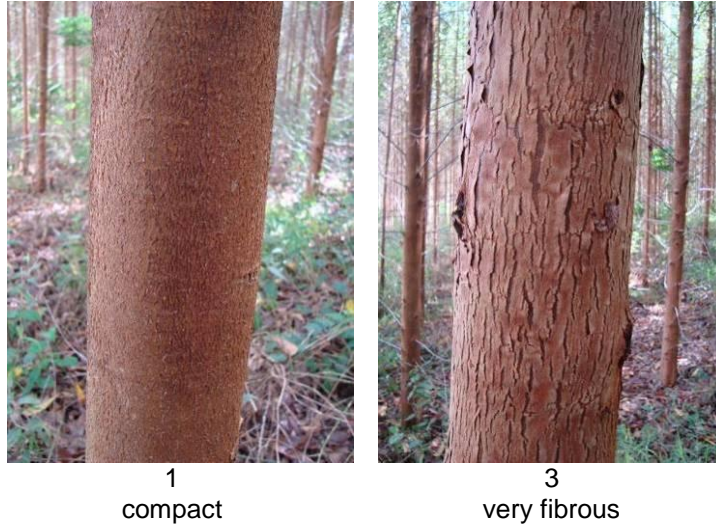


1
absent

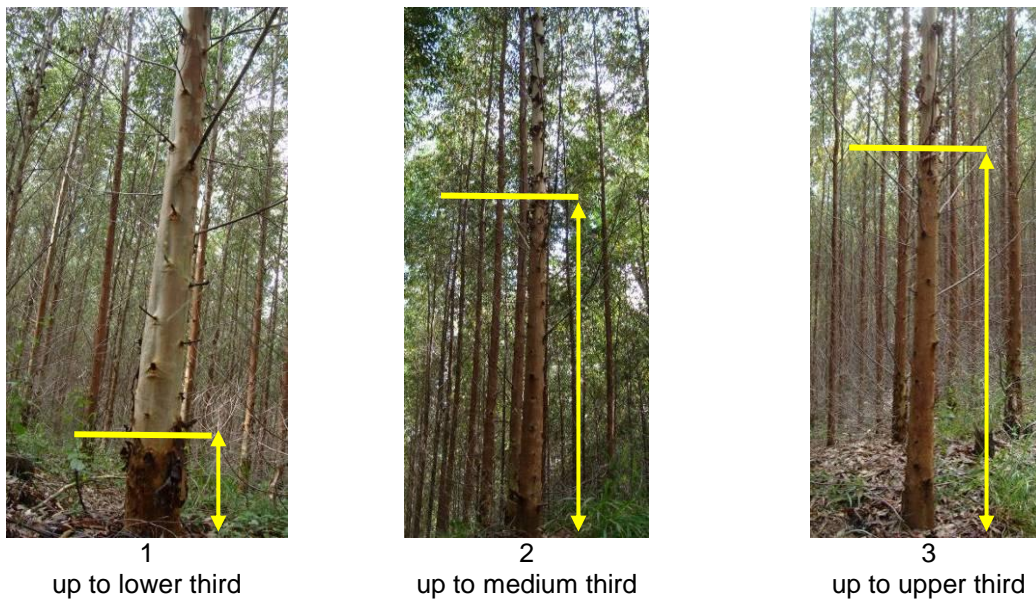


9
present

Ad. 37: Trunk: texture of basal rhytidome



Ad. 38: Trunk: extension of rhytidome



Ad. 39: Trunk: density of wood

The density should be evaluated on the basis of wood volume, through the hydrostatic balance methodology, according to TAPPI Norm #T258 om-94 (Technical Association of Pulp and Paper Industry).

Ad. 45: Flower: type



1
solitary

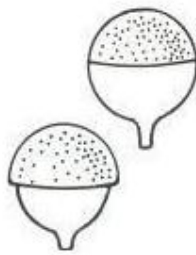


2
umbel

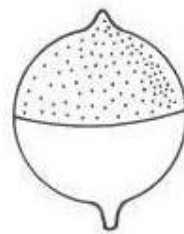
Ad. 47: Flower bud: shape of operculum



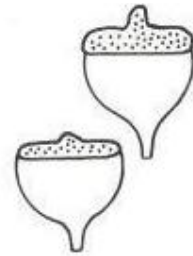
1
rostrate



2
hemispherical



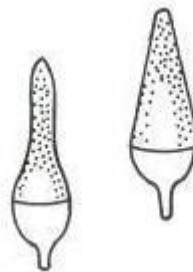
3
hemispherical
apiculate



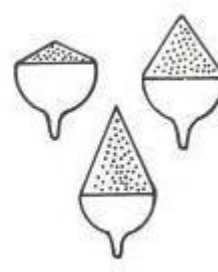
4
flattened with a prominent
pointed tip



5
horn-shaped



6
elongated



7
conical

Ad. 49: Peduncle: shape in cross section

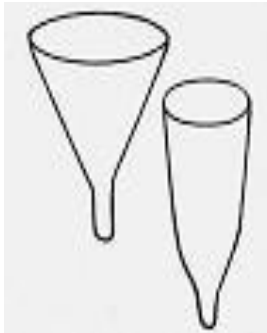


1
rounded

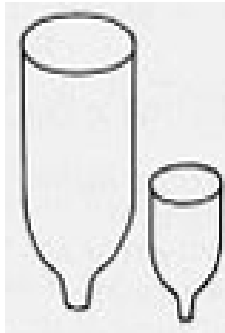


3
flattened

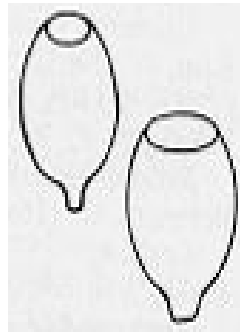
Ad. 51: Fruit: shape



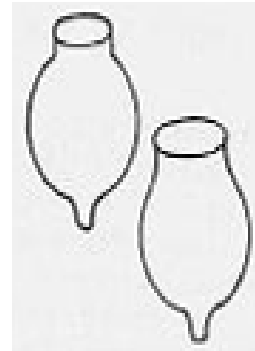
1
conical



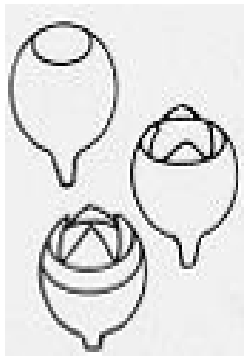
2
cylindrical



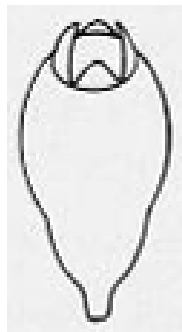
3
ovoid



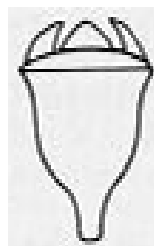
4
urceolate



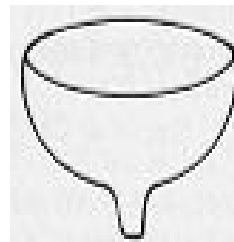
5
globose



6
pyriform



7
campanulate



8
hemispherical

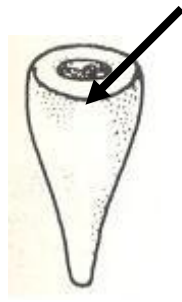
Ad. 52: Fruit: texture of surface

The texture of the fruit should be observed on current season's fruit.

Ad. 53: Fruit: disc position



1
descending



2
same level



3
ascending

Ad. 54: Fruit: valve position



1
sunken

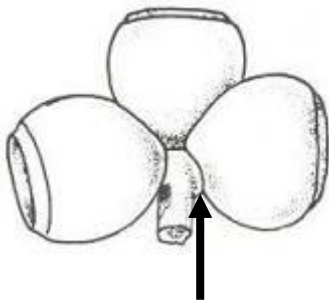


2
rim level

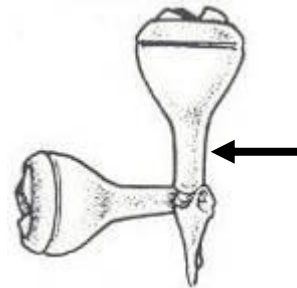


3
above rim

Ad. 55: Fruit: pedicel



1
absent



9
present

9. Literature

Boland, D. J.; Brooker, M. I. H.; Chippendale, G. M.; Hall, N.; Hyland, B. P. M.; Johnston, R. D., Kleinig, D. A. & Turner, J. D., 1994: Forest trees of Australia. 4^a ed. Melbourne, AU, Nelson: CSIRO, 703 p.

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FAO, 1981: El eucalipto en la repoblación forestal. Roma, IT, 723 p.

Goes, E., 1985: Os Eucaliptos. Lisboa, PT, 372 p.

Penfold, A.R. & Willis, J.L., 1961: The Eucalypts. New York, US, 551p.

Drawings by: Anna Júlia Passold, Israel Gomes Vieira and Joel F. Penteado Jr. (Personal files of the researchers of the Instituto de Pesquisas e Estudos Florestais - IPEF, São Paulo, Brasil.)

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

	Application date: (not to be filled in by the applicant)
--	---

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1 Genus

1.2 Sub-genus

1.3 Section

1.4 Species
(please complete)

2. Applicant

Name

Address

Telephone No.

Fax No.

E-mail address

Breeder (if different from applicant)

3. Proposed denomination and breeder's reference

Proposed denomination
(if available)

Breeder's reference

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
-------------------------	-----------------	-------------------

#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross []
(please state parent varieties)

(.....) x (.....)
female parent male parent

(b) partially known cross []
(please state known parent variety(ies))

(.....) x (.....)
female parent male parent

(c) unknown cross []

4.1.2 Mutation []
(please state parent variety)

.....

4.1.3 Discovery and development []
(please state where and when discovered and how developed)

.....

4.1.4 Other []
(please provide details)

.....

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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4.2 Method of propagating the variety

4.2.1 Vegetative propagation

- (a) cuttings []
- (b) *in vitro* propagation []
- (c) other (state method) []

[]

4.2.2 Other []
(please provide details)

[]

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5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

Characteristics	Example Varieties	Note
5.1 Leaf: waxiness of upper side (2)		
absent or weak	IPB3, IPB4, SUZSP0619	1[]
medium	VM08	2[]
strong	VT06	3[]
5.2 Leaf: petiole (4)		
absent		1[]
present		9[]
5.3 Primary branch: type of insertion in main stem (13)		
inverted "V"		1[]
circular		2[]
5.4 Flower: type (45)		
solitary		1[]
umbel		2[]
5.5 <u>Only varieties with flower type: umbel</u>: Flower: number of buds (46)		
three		1[]
seven		2[]
nine		3[]
eleven		4[]
more than eleven		5[]

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Characteristics	Example Varieties	Note
5.6 Fruit: shape (51)		
conical		1[]
cylindrical		2[]
ovoid		3[]
urceolate		4[]
globose		5[]
pyriform		6[]
campanulate		7[]
hemispherical		8[]

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6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Trunk: color (excluding rhytidome)</i>	<i>green</i>	<i>bluish green</i>

Comments:

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#7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [] No []

(If yes, please provide details)

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes [] No []

(If yes, please provide details)

7.3 Other information

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [] No []

(b) Has such authorization been obtained?

Yes [] No []

If the answer to (b) is yes, please attach a copy of the authorization.

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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9. Information on plant material to be examined or submitted for examination.

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

- | | | |
|---|---------|--------|
| (a) Microorganisms (e.g. virus, bacteria, phytoplasma) | Yes [] | No [] |
| (b) Chemical treatment (e.g. growth retardant, pesticide) | Yes [] | No [] |
| (c) Tissue culture | Yes [] | No [] |
| (d) Other factors | Yes [] | No [] |

Please provide details for where you have indicated "yes".

.....

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name

Signature

Date

[End of document]